Under-Body Blast Medical Research Industry Day
Request For Information

This Request for Information (RFI) is for information and planning purposes only and shall not be construed as a solicitation or as an obligation on the part of the U.S. Army Medical Research and Materiel Command (USAMRMC), Headquartered at Fort Detrick, Maryland. The USAMRMC mission is to provide medical knowledge and materiel lifecycle management to protect, treat and optimize Warfighter health and performance across the full spectrum of operations.

In fiscal year 2011 (FY11), the USAMRMC is initiating an Under-Body Blast (UBB) medical research program for understanding the human tolerance limits and injury mechanisms needed to accurately predict injuries, including skeletal and soft tissues, to ground combat vehicle occupants caused by UBB events.

The aims of the DoD Underbody Blast Testing program are to enable the Live Fire Test and Evaluation (LFT&E) community to conduct realistic survivability testing of ground combat vehicles subjected to UBB threats. The primary emphasis is on improving the criteria, methodologies, and metrics used to assess warrior injuries from accelerative loading sustained during underbody Live Fire test events, assessing potential occupant casualties, and enabling the development and testing of improved occupant protection systems. The medical research and development program will focus on assessing human injury risk from fracture and potential soft tissue injury that occur as a result of loading regimes experienced during blast event through a structure and into a seated or standing occupant.

This new research program will augment on-going related medical and or non-medical research and development programs of the Department of Defense (DoD). The USAMRMC primary focus in this R&D program is to provide biomedically validated injury data associated with loading regimes recorded during an underbody blast event to the LFT&E community. The overarching DoD goal is to utilize that data through a matched-pair comparison to create a Warrior representative anthropomorphic test device (ATD) and develop associated biomedically validated injury criteria that can be used to characterize blast events and injury risks for live-fire assessment, and to support vehicle development efforts to better protect Warriors from Under-Body Blast threats.

Under-Body Blast creates injurious forces on occupants of ground combat vehicles that are more violent and that act in directions not normally encountered in civilian

automotive accidents. Injury prediction tools that were developed to assess occupant safety in automobile crashes are not adequate for assessing occupant survivability in ground combat vehicles exposed to UBB threats. For example, the accelerative loads induced by UBB differ from those experienced in automotive crashes; their magnitude is greater and the direction of the accelerative loads more aligned with the vertical direction than the horizontal. As a result, the ATD's developed based upon the civilian automotive are inadequate for assessing occupant survivability in ground combat vehicles exposed to UBB threats and by extension DoD's ability to evaluate a platform's vulnerability to underbody threats. Therefore, accurately predicting the spectrum of injuries caused by UBB forces in live-fire tests of ground combat vehicles presents a unique challenge for the DoD. To meet this challenge, the DoD intends to leverage the expertise that resides within and outside of the DoD, and build upon the existing body of knowledge of human tolerances and injury mechanisms associated with blast threats.

The Deputy Project Manager-Medical (DPM-Medical) of the DoD UBB ATD program at USAMRMC is hosting an Industry Day to (1) present Warrior Injury Assessment Manikin (WIAMan) program plan; (2) allow performers/producers of existing technologies and research efforts that are highly relevant to understanding human tolerance limits and predicting injuries sustained by ground combat vehicle occupants as a result of UBB from explosive devices, such as mines and improvised explosive devices (IEDs), and which will enhance the LFT&E community's ability to assess ground combat vehicle occupant survivability in live fire tests, and support the development and testing of effective occupant protection systems to identify how they can assist in accomplishing proposed research effort (see WIAMan briefing on registration website); (3) identify organizations that have developed concepts for relevant human tolerance limits and associated injury prediction tools, or have experience in mapping human tolerance levels from cadaver-based anatomical injuries induced in a blast environment to the ATD, and possess appropriate scientific expertise, experience, and resources to conduct studies that can provide the scientific evidence needed to support the development of DoD requirements for protection from blast injury that will be used for survivability assessments and protection system development; (4) identify anthropomorphic test devices, components, and associated technologies with the potential to have a near term significant contribution to the development of relevant human tolerance limits and injury prediction tools for UBB, provide the LFT&E community with enhanced survivability assessment capabilities, and provide an upgradable platform for continuous integration of improved technologies; and (5) obtain information from a broad community, including

industry, academia, and other federal agencies on the availability of militarily relevant blast test devices, that can realistically measure the human tolerance limits necessary for predicting ground combat vehicle occupant injuries in UBB live fire tests.

The Industry Day will be held from March 15-18, 2011 at the RAND Corporation Offices in Arlington, Virginia.

The Government intends to use this Industry Day as a means to inform the appropriate corporate, academic, and governmental entities able to support this effort; and to identify existing technologies, relevant capabilities, and optimum approaches that will accelerate the development and integration of human tolerance limits and injury prediction tools and enhance the LFT&E community's ability to accurately assess ground combat vehicle occupant survivability in UBB events, and enable the development and testing of improved occupant protection systems. The knowledge gained from this meeting will inform the DPM-Medical who is responsible for developing the aforementioned medical research and development plan and solicitations for research proposals that support the medical research plan and the overarching DoD goal.

This Industry Day is limited to 150 participants, with no more than three subject matter experts (participants) representing a given institution. There is no registration fee for the Industry Day and early registration is highly encouraged. As part of the registration process, potential attendees are requested to submit a written description of their current research highlighting their contributions to the field of injury assessment caused by UBB and/or their ongoing pursuit of novel paradigms addressing this issue. This written description may be no more than 10 pages in length, and may include proprietary information that is properly marked as such. Proprietary information will not be shared with the meeting participants. Registration will be on a first come first served basis (Registration Site: https://blastinjuryresearch.amedd.army.mil/index.cfm?f=application.ubbrfi). Registration will close on March 4, 2011 at 12:00 midnight Eastern Standard Time or once 150 participants are confirmed, whichever comes first. Each organization represented will be asked to prepare in advance and present a brief overview (10 slides / 15-20 minutes maximum to be shared in an open forum at the Industry Day) outlining their current research or technology development efforts that are relevant to the topic of this meeting. Copies of the slides must be submitted no later than March 8, 2011. Participants should come prepared to share knowledge and ideas. Participant presentations should adhere to meeting objectives provided

and not attempt to use the Industry Day as a marketing, promotional, sales or contact-building event.

DISCLAIMERS AND IMPORTANT NOTES

This is an RFI issued solely for information and program planning purposes; it does not constitute a formal solicitation for proposals. In accordance with FAR 15.201(e), responses to this notice are not offers and cannot be accepted by the Government to form a binding contract. Submission is voluntary and is not required to propose to a subsequent Broad Agency Announcement (BAA) (if any) or other research solicitation (if any) on this topic.

The USAMRMC/U.S. Army Medical Research Acquisition Activity (USAMRAA)/DPP-Medical will not provide reimbursement for costs incurred in responding to this RFI or for attending the meeting. Respondents are advised that USAMRAA/USAMRMC/DPP-Medical are under no obligation to acknowledge receipt of the information received or provide feedback to respondents with respect to any information submitted under this RFI.

Questions should be addressed to the Contract Specialist who is the point of contact for this event. The Contract Specialist is Mr. Chasen Deener, may be reached at (301) 619-8585or via e-mail at chasen.deener@amedd.army.mil